

REMARKS

Claims 1 to 10 and 13-14 are pending. Claims 11 and 12 have been canceled herein without prejudice. Claim 1 has been amended. Support for amended claim 1 is found in the published application, for example, at Paragraph [0033] and in original Claim 3. No new matter has been added.

Claims 11 and 12 are objected to as being improper. (Office Action p. 2)

Claims 11 and 12 are canceled making this rejection now moot.

Claim rejections under 35 U.S.C. § 103a

Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Publication No. US 2004/0110890 (the ‘890 Publication) in view of United States Patent No. 6,124,004 to Furuta et al. (the ‘004 Patent) or United States Patent No. 7,063,892 to Okamoto et al. or United States Patent No. 7,014,921 to Okamoto et al. or United States Patent No. 6,797,345 to Okamoto et al. (collectively, the Okamoto Patents).

The rejection alleges that the ‘890 Publication teaches a polyester composition for appearance parts containing an ethylene/acrylate ester copolymer, a semicrystalline polyester and short fibers or whiskers. The rejection further alleges that the ‘890 Publication discloses that the composition can be molded to form shaped parts that can be coated with metal by vapor phase deposition and metal sputtering. The rejection states that the ‘890 Publication does not specifically teach plasma treating the polyester molded substrate prior to metal sputtering. Nevertheless, the rejection relies on the ‘004 Patent and the Okamoto patents for the teaching of plasma treatment of substrates prior to lamination.

As an initial comment, Applicants note that the ‘890 Publication discloses the use of semicrystalline polymers of which isotropic polymers are preferred. Nevertheless, with regard to the semicrystalline polymers, Paragraph [0019] of the ‘890 Publication discloses poly(alkylene

terephthalates) such a poly(ethylene terephthalate)(PET), poly(1,3-propylene terephthalate)(PPT), and poly(1,4-butylene terephthalate)(PBT), poly[1,4-bis(hydroxymethyl)cyclohexane terephthalate](PCT) and their copolymers containing small amounts (<30 mole percent of the diol and/or diacid components, as appropriate) of other monomers, such as diethylene glycol, isophthalic acid, and 1,4-bis(hydroxymethyl)cyclohexane. PET and PBT and their copolymers are especially preferred. **Indeed, all of the disclosed SCPEs of the ‘890 Publication are terephthalates.** None of the SCPEs of the ‘890 Publication teach or suggest any aryl moiety other than the terephthalate’s 1,4-benzenedicarboxylic acid moiety. More importantly, none of the SCPEs of the ‘890 publication teach or suggest any heteroaryl moiety, let alone an imidazole moiety.

Claim 1 has been amended to recite that liquid-crystalline polyester is the reaction product obtained by performing the ester-exchange and polycondensation reaction in the presence of an imidazole. According to the instant specification the inclusion of imidazole provides an excellent adhesion between the substrate and the metal layer of the metal-coated resin molded article. (Paragraph [0033]). As such, Applicants contend that one of ordinary skill in the art would have had no reasonable expectation of success in achieving the metal-coated resin molded article having excellent adhesion between the metal and the resin of the instant invention by utilizing the terephthalate materials of the ‘890 Publication. Furthermore, one of ordinary skill in the art would have had no motivation to modify the terephthalate moiety of the ‘890 Publication to arrive at the imidazole containing LCP of the instant invention. Similarly, nothing in the ‘004 Patent or the Okamoto patents, which the Examiner cites for plasma treatment, provides any motivation or reasonable expectation of success in modifying the materials of the ‘890 Publication to arrive at the imidazole containing LCP of the instant invention.

As such, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. § 103 over the ‘890 Publication, the ‘004 Patent and/or the Okamoto Patents.

Claims 1-16 are also rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 6,124,004 to Furuta et al. (the '004 Patent) alone or in view of United States Patent No. 5,891,532 to Furuta et al. (the '532 Patent) in further view of United States Patent No. 7,063,892 to Okamoto et al. or United States Patent No. 7,014,921 to Okamoto et al. or United States Patent No. 6,797,345 to Okamoto et al. (collectively, the Okamoto Patents).

The rejection alleges that the '004 Patent teaches a laminate of liquid crystal polymer resin with metallic foil wherein the LCP resin comprises a LCP and a rubber having a functional group reactive with the LCP. The rejection further alleges that the '004 Patent teaches that the function rubber is preferably a (meth)acrylate-ethylene-unsaturated carboxylic acid glycidyl ester and/or unsaturated glycidyl ester copolymer rubber having an ethylene content of preferably more than 3wt% but less than 50wt%. The rejection alleges that the '532 Patent provides a similar LCP resin but with an ethylene value of 50-99.9% by weight to provide a particular stiffness modulus. It is alleged that it would be obvious to one of skill in the art that utilizing values just above the preferred range would be suitable, particularly in light of the '532 Patent, in order to optimize the desired end properties of the resin. Finally, the rejection alleges that the Okamoto patents demonstrate a functional equivalence between different methods of producing an LCP/metal.

Applicants respectfully maintain and reassert the position that the '004 Patent is limited to a laminate comprising a metallic foil and a layer made of liquid crystal polymer and that the '004 Patent specifically gives preference to the addition of an adhesive layer interposed between the liquid-crystal polymer resin and the metallic foil (Column 12). Applicants assert that, in light of the adhesive layer, one of ordinary skill in the art would have had no motivation to utilize a PVD method to adhere the metal film.

Nevertheless, Applicants further note that the '004 Patent states that the component ratio of the ethylene unit is preferably more than 3 but less than 50% by weight, more preferably 10 to 49% of an ethylene unit. The '004 Patent further states that the ratio of (meth)acrylate is related to the

embrittlement or rubber elasticity of the rubber and that the ratio of the glycidyl component is related to the film forming and mechanical properties of the composition. The '004 Patent is silent to the effect of the ethylene component.

The '532 Patent states in col. 9, lines 58-64:

The epoxy group-containing ethylene copolymer (B) preferably has stiffness modulus in a range of 10 through 1300 kg/cm² and more preferably in a range of 20 through 1100 kg/cm². *The stiffness modulus out of the above range is not preferred because it may result in insufficient film-molding processibility of the resulting resin composition and insufficient mechanical properties of the resulting film.* (emphasis added)

Nothing in the '532 Patent attributes this stiffness modulus to the content of the ethylene unit as the rejection alleges. As such, Applicants respectfully assert that the rejection's contention that one of ordinary skill in the art would have had motivation to modify the ethylene content of the '004 Patent to a higher value in light of the '532 Patent is lacking a sufficient basis. That is to say, one of ordinary skill in the art would have had no motivation to utilize an amount greater than 50% by weight. At best, one of ordinary skill in the art would only have been motivated to use an amount less than 50%, as the more preferred range in the *'004 Patent logically directs one of ordinary skill in the art toward lower ranges.*

Accordingly, one of ordinary skill in the art would have had no motivation to modify the ethylene content of the '004 Patent in light of the conflicting teachings of the '004 Patent and the '532 patent. Similarly, nothing in the Okamoto patents rectifies this conflict..

As such, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. § 103 over the '004 Patent, the '532 Patent and/or the Okamoto Patents.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicants believe that no additional fees, other than the fee for the two-month extension of time, are required in connection with this paper. Nevertheless, Applicant authorizes the Director to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to Deposit Account No. 04-1105, under Order No. 80079(302721).

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Respectfully submitted,

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